

WHAT IS CLAIMED IS:

1. Apparatus for routing a telephone call to a data network, the apparatus comprising:
- 5 (a) a memory for storing a category of telephone numbers representing telephone calls to be placed over a data network in packet switched format; and
- (b) processing means for accepting a dialed telephone call, for determining whether said call is within said category, and for routing said call to said data network if so.
2. Apparatus of claim 1 connected to a data network, wherein said data network includes plural originating gateways, and wherein said memory stores information concerning which of said plural originating gateways to utilize to access said data network.
3. Apparatus of claim 2 wherein said each of said originating gateways is capable of communicating over a data network to plural terminating gateways.
- 15 4. Apparatus of claim 1 wherein said category is comprised of all calls outside of an area code in which the call originates.
5. Apparatus of claims 3 connected via a data network to an operations center, said operations center being capable of altering information stored within said memory and implementing changes to said category of telephone numbers.
- 20 6. Apparatus of claim 4 connected via a telephone network to an operations center, said operations center being capable of altering information stored within said memory and implementing changes to said category of telephone numbers.
7. A method for routing telephone calls, comprising the steps of:

(a) examining a received telephone number to ascertain whether a particular property is present;

(b) if so, routing the call to an originating gateway, and if not, routing the call to a telephone switch; and

5 (c) if said call is routed to said originating gateway, examining the telephone number again to determine to which of a plurality of terminating gateways said call should be routed.

8. The method of claim 7 wherein said originating gateway makes said determination of said terminating gateway in conjunction with other gateways.

10 9. The method of claim 8 further comprising the step of reallocating traffic among plural terminating gateways.

10. A method of completing a telephone call, comprising the steps of:

(a) examining a dialed number associated with a call prior to said call reaching a telephone switch;

15 (b) if said number is within a predetermined class of numbers, conveying said telephone call to a first remotely located telephone switch over a data network; and

(c) if said number is not within said predetermined class of numbers, conveying said telephone call to a second remotely located telephone switch over a
20 telephone network.

11. The method of claim 10 wherein said remote telephone switch is reached via either a telephone switch, a first terminating gateway, or a second terminating gateway, and wherein the determination of which of said first or second terminating

gateways or said telephone switch is utilized to reach said remote telephone switch is made at least in part by comparing a predetermined subset of digits contained in a called telephone number.

12. A network for completing telephone calls, the network comprising a router
5 connected directly to a calling telephone, the router being programmed to separate long distance calls from local calls, the router further being programmed to transmit some of said long distance calls and all of said local calls over a circuit switching network, and the remainder of said long distance calls over a packet switching network.

13. The network of claim 12 further comprising a plurality of originating
10 gateways, at least one of which is in communication with said router for converting circuit switched calls to packet switched calls, and for routing same over a data network.

14. The network of claim 13 further comprising a terminating gateway to
convert telephone calls from a packet switching format on said data network to a circuit
switching format, and to place said calls in circuit switching format on said telephone
15 network.

15. The network of claim 14 wherein each of said terminating gateways incurs
a charge as a result of terminating said calls, and wherein changes in such charges are
utilized to update routing information stored in said router.

16. An operations center for evaluating performance and effectuating routing
20 decisions comprising;

(a) data gathering means for gathering call metrics regarding calls completed
through a plurality of gateways; and

(b) means for transmitting information derived from said metrics to (1) a router, said router connected to a calling telephone and also connected to a data network and a telephony network, and (2) a gateway, connected to said router and to said data network.

5 17. The operations center of claim 16 wherein said metrics include completion rate and call length.

18. The operations center of claim 16 wherein information derived from said metrics and sent to said router is different from information derived from said metrics and sent to said gateways.

10 19. A method for routing a telephone call over a data network comprising the steps of:

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- (a) receiving a dialed number by a router;
 - (b) parking the dialed number at the router;
 - (c) transmitting the dialed number from the router to an originating gateway;
 - (d) parking the dialed number at the originating gateway;
 - (e) finding an optimum terminating gateway to accept said call over said data network;
 - (f) sending the dialed number from the first gateway to a second gateway over said data network; and
 - 20 (g) connecting the call to a terminal identified by the dialed number.

20. The method for routing a telephone call as described in claim 19, further comprising the steps of acquiring the caller's number and determining if the caller is authorized.

5 21. The method of claim 20, wherein the step of determining if the caller is authorized, comprises:

- (a) transmitting the calling number from the router to a computer;
- (b) accessing a database associated with the computer; and
- (c) comparing a calling number to information stored in the database.

10 22. The method for routing a telephone call as described in claim 20, further comprising the step of sending an authorization to the router if the caller is authorized.

15 23. The method for routing a telephone call as described in claim 20, further comprising the step of terminating the call if the caller is not authorized.

20 24. The method for routing a telephone call as described in claim 19, further comprising the step of locating an optimum terminating gateway.

25. A method for routing a telephone call, comprising the steps of:

- (a) receiving a dialed number by a router;
- (b) parking the dialed number at the router;

- (c) determining if the caller is authorized;
- (d) if the caller is authorized, sending the dialed number from the router to a first gateway;
- (e) parking the dialed number by the first gateway;
- 5 (f) sending the dialed number from the first gateway to a second gateway;
- and
- (g) connecting the call to a terminal identified by the dialed number.

10 26. The method for routing a telephone call as described in claim 25, further comprising the steps of acquiring the calling number by the router and transmitting the calling number from the router to a computer.

15 27. The method for routing a telephone call as described in claim 25, further comprising the step of selecting a terminating gateway.

20 28. The method for routing a telephone call as described in claim 25, further comprising the step of sending an authorization to the router if the caller is authorized.

29. The method for routing a telephone call as described in claim 25, further comprising the step of terminating the call if the caller is not authorized.

30. Apparatus for completing calls over either a Public Switched Telephone Network or a Data Network, the apparatus comprising:
- (a) means for receiving a telephone number from a terminal,
 - 5 (b) means for storing said telephone number, and for acquiring and storing said number;
 - (c) means for substituting a different number for said telephone number if said telephone number is within a predetermined class of numbers;
 - (d) means responsive to said means for substituting for establishing a call
10 from said apparatus to a second apparatus at said substituted different number using out of band signaling, and
 - (e) means responsive to said establishing means for transmitting said dialed number in band to said second apparatus.
31. Apparatus of claim 30 wherein said second apparatus is a gateway.
32. Apparatus of claim 30 wherein said second apparatus is a computer.
33. Apparatus of claim 31 wherein said second apparatus communicates over the data network with plural computers to perform authentication and verification prior to completing a call.
34. Apparatus for processing dialed numbers and conveying them to a network to
20 complete calls, the apparatus comprising transmitting said dialed number to the network using in band signaling if the dialed number represents a long distance call, and transmitting the dialed number to the network using out of band signaling if the dialed number represents a local call.

35. Apparatus of claim 34 connected to a network operations center, said network operations center configured to update stored information in said apparatus over a data network.

36. Apparatus of claim 35 wherein dialed numbers transmitted in band are transmitted to a telephone switch, and dialed numbers transmitted out of band are transmitted to a gateway.

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